

## REMARKS

Claims 1-22 and 24-35 are pending in the present application. The Office Action mailed August 25, 2005, the Examiner took the following action: (1) objected to the drawings; (2) objected to the specification; (3) objected to claims 6 and 18 due to informalities; (4) rejected claims 3, 15, and 30 under 35 U.S.C. §112, ¶1 due to lack of enablement; (5) rejected claims 1, 2, 10-14, 22, 24-29 and 32-35 under 35 U.S.C. 102(b) as being anticipated by Adams (U.S. Patent No. 3,627,436); and (6) rejected claims 4, 16, and 31 under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Alam (U.S. Pub. No. 2004/0076484).

The Examiner acknowledged, however, that claims 5-9 and 17-21 would be allowable if rewritten to include the limitations of their respective base and intervening claims, and that claims 3, 15, and 30 would be allowable if rewritten to overcome the above-noted rejection as well as to include the limitations of their respective base and intervening claims. Applicants wish to thank the Examiner for acknowledging the presence of allowable subject matter, and respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

### *I. Objections to the Drawings*

The Examiner objected to the drawings under 37 C.F.R. 1.83(a) on grounds that the drawings allegedly fail to show a limitation recited in claims 3, 15, and 30. Claims 3, 15, and 30 have been amended to more distinctly claim the subject matter which Applicants regard as their invention. Specifically, the amended claims recite that the "track assembly includes a vacuum cup assembly adapted to secure to a surface of the workpiece." Applicants submit that the limitations recited in amended claims 3, 15, and 30 are now properly shown in the drawings, and respectfully request reconsideration and withdrawal of the objection to the drawings.

46020

CUSTOMER NUMBER

- 14 -

## *II. Objections to the Specification*

The Examiner objected to the specification due to informalities. Applicants have amended the specification to correct the informalities noted by the Examiner. Specifically, on page 5 at line 33, the specification has been amended to recite -- second baseplate 172 --, and on page 6 at line 30, the specification has been amended to recite -- second auxiliary rails 174 --. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections to the specification.

## *III. Objections to the Claims*

The Examiner objected to claims 6 and 18 due to informalities. Applicants have amended claims 6 and 18 to correct the informalities noted by the Examiner. Specifically, claim 6 has been amended to recite "adapted to move the securing device" and claim 18 has been amended to recite "adapted to move the securing device." Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections to the claims due to informalities.

## *IV. Allowable Subject Matter*

### Claims 1, 2, 4, and 10-12

Applicants have amended claim 1 to include the limitations of claim 3, except that the limitations of claim 3 have been amended to recite that the "track assembly" includes a vacuum cup assembly (rather than the opposing-force assembly), thereby overcoming the Examiner's rejection of claim 3 under 35 U.S.C. §112, ¶1 due to lack of enablement. Claim 3 has been cancelled. Therefore, Applicants respectfully submit that claim 1 is now in condition for allowance as acknowledged by the Examiner, as well as claims 2, 4, and 10-12 which depend

46020

CUSTOMER NUMBER

- 15 -

from claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1, 2, 4, and 10-12.

Claims 5-9

Applicants have amended claim 5 to include the limitations of claim 1, thereby placing claim 5 in condition for allowance as acknowledged by the Examiner. Claims 6-9 depend from claim 5 and are therefore also allowable. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections to claims 5-9.

Claims 13, 14, 16, 22, and 24-26

Applicants have amended claim 13 to include the limitations of claim 15, except that the limitations of claim 15 have been amended to recite that the “track assembly” includes a vacuum cup assembly (rather than the opposing-force assembly), thereby overcoming the Examiner’s rejection of claim 15 under 35 U.S.C. §112, ¶1 due to lack of enablement. Claim 15 has been cancelled. Therefore, Applicants respectfully submit that claim 13 is now in condition for allowance as acknowledged by the Examiner, as well as claims 14, 16, and 22-26 which depend from claim 13. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 13, 14, 16, and 22-26.

Claims 17-21

Applicants have amended claim 17 to include the limitations of claim 13, thereby placing claim 17 in condition for allowance as acknowledged by the Examiner. Claims 18-21 depend from claim 17 and are therefore also allowable. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections to claims 17-21.

46020

CUSTOMER NUMBER

- 16 -

BING-1-1003ROA.doc

BLACK LOWE & GRAHAM<sup>PLLC</sup>



701 Fifth Avenue, Suite 4800  
Seattle, Washington 98104  
206.381.3300 • F: 206.381.3301

Claims 27-29 and 31-35

Applicants have amended claim 27 to include the limitations of claim 30, except that the limitations of claim 30 have been amended to recite that “moveably supporting a manufacturing assembly” includes applying a vacuum pressure to a surface of the workpiece (rather than “applying an opposing force”), thereby overcoming the Examiner’s rejection of claim 30 under 35 U.S.C. §112, ¶1 due to lack of enablement. Claim 30 has been cancelled. Therefore, Applicants respectfully submit that claim 27 is now in condition for allowance as acknowledged by the Examiner, as well as claims 28-29 and 31-35 which depend from claim 27. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 27-29 and 31-35.

*V. Rejection of claims 3, 15, and 30 under 35 U.S.C. §112, ¶1 due to lack of enablement*

The Examiner rejected claims 3, 15, and 30 under 35 U.S.C. §112, ¶1 due to lack of enablement. Applicants have canceled 3, 15, and 30, thereby rendering these rejections moot.

*VI. Rejection of claims 1, 2, 10-14, 22, 24-29, and 32-35 under 35 U.S.C. §102(b) as being anticipated by Adams, and the rejections of claims 4, 16, and 31 under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Alam (U.S. Pub. No. 2004/0076484)*

Based on the above-noted amendments, Applicants respectfully submit that the rejections of claims 1, 2, 10-14, 22, 24-29, and 32-35 under 35 U.S.C. §102(b) as being anticipated by Adams, and the rejections of claims 4, 16, and 31 under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Alam (U.S. Pub. No. 2004/0076484) have been rendered moot, and respectfully request withdrawal of these rejections.

46020

CUSTOMER NUMBER

- 17 -

VII. New claims 36-42

Claim 36 recites an apparatus for supporting a manufacturing tool relative to a workpiece, the apparatus comprising a track assembly adapted to be attached to the workpiece; a carriage moveably coupled to the track assembly and moveable relative to the workpiece along a translation axis, the carriage including a tool support adapted to receive and support a manufacturing tool; and an opposing-force support assembly operatively coupled to the carriage and adapted to be secured to the workpiece to at least partially counterbalance a manufacturing force exerted on the workpiece by the manufacturing tool, *wherein at least one of the carriage and the tool support are moveable relative to the opposing-force support assembly such that a manufacturing operation may be performed at a plurality of locations on the workpiece relative to the opposing-force support assembly when the opposing-force support assembly is secured at a single support location to the workpiece*. (emphasis added).

Adams (U.S. 3,627,436)

Adams teaches apparatus and methods that include a reciprocating actuator that successively engages a drill and a clamp unit to a workpiece. (2:8-14). More specifically, Adams teaches engaging the clamp unit, performing a drilling operation, then moving the clamp unit to a new location to perform another drilling operation in a “step-by-step” mode of operation. (2:14-15). There is no teaching or suggestion in Adams of an apparatus *wherein at least one of the carriage and the tool support are moveable relative to the opposing-force support assembly such that a manufacturing operation may be performed at a plurality of locations on the workpiece relative to the opposing-force support assembly when the opposing-*

46020

CUSTOMER NUMBER

- 18 -

BING-1-1003ROA.doc

BLACK LOWE & GRAHAM PLLC

701 Fifth Avenue, Suite 4800  
Seattle, Washington 98104  
206.381.3300 • F: 206.381.3301

*force support assembly is secured at a single support location to the workpiece. (emphasis added).*

Alam (US 2004/0076484 A1)

Similarly, Alam teaches a clamping element that holds a plurality of layers together tightly as a hole is drilled. (Paragraph 0033). Each time the drill is moved to a new drilling location, the clamping element also moves to a new clamping location. (Paragraph 0049). There is no teaching or suggestion in Alam of an apparatus *wherein at least one of the carriage and the tool support are moveable relative to the opposing-force support assembly such that a manufacturing operation may be performed at a plurality of locations on the workpiece relative to the opposing-force support assembly when the opposing-force support assembly is secured at a single support location to the workpiece.* (emphasis added).

For the forgoing reasons, claim 36 is allowable, as are claims 37-39 depending therefrom.

Claims 40-42

Similarly, claim 40 recites a method of performing a manufacturing operation on a workpiece, the method comprising: moveably supporting a manufacturing assembly proximate a surface of the workpiece, the manufacturing assembly including a manufacturing tool and an opposing-force support assembly, the manufacturing assembly being moveable along a translation direction that is at least partially along a direction perpendicular to a local normal to a surface of the workpiece, the manufacturing assembly being further adapted such that the manufacturing tool is moveable relative to the opposing-force support assembly such that a manufacturing operation may be performed at a plurality of locations on the workpiece relative to the opposing-force support assembly when the opposing-force support assembly is secured to the workpiece; applying an opposing force against the workpiece using the opposing-force support assembly at a support location, the opposing force being in a direction substantially

46020

CUSTOMER NUMBER

- 19 -

BING-I-1003ROA.doc

BLACK LOWE & GRAHAM PLLC

  
701 Fifth Avenue, Suite 4800  
Seattle, Washington 98104  
206.381.3300 • F: 206.381.3301

parallel with and opposite to the manufacturing force; and *simultaneously with applying the opposing force against the workpiece, successively applying a manufacturing force against the workpiece using the manufacturing tool at a plurality of positions relative to the support location, the manufacturing force being at least partially along the local normal.* (emphasis added). For the reasons set forth above, claim 40 is allowable over the prior art, as are claims 41-42 depending therefrom.

## CONCLUSION

For the foregoing reasons, Applicants respectfully submit that claims 1-2, 4-14, 16-22, 24-29, and 31-42 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to call the undersigned at his convenience.

Respectfully submitted,

BLACK LOWE & GRAHAM<sup>PLLC</sup>



Dale C. Barr  
Registration No.: 40,498  
Direct Dial: 206.957.2463

## MAIL CERTIFICATE

I hereby certify that this communication is being deposited with the United States Postal Service via first class mail under 37 C.F.R. § 1.08 on the date indicated below addressed to: MAIL STOP AMENDMENTS, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

December 15, 2005  
Date of Deposit

Wendy Saxby

46020

CUSTOMER NUMBER

- 20 -

BLACK LOWE & GRAHAM<sup>PLLC</sup>



701 Fifth Avenue, Suite 4800  
Seattle, Washington 98104  
206.381.3300 • F: 206.381.3301